

FACTSHEET



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CULL COW BODY AND CARCASS COMPOSITION

D. Blakely

With limited slaughter capacity for cull cows in Canada combined with the closing of the U.S. border to live animals and meat products from animals over 30 months of age, producers are faced with investigating marketing alternatives to increase returns from cull cows. This Factsheet will increase producer knowledge of terminology used with cull cows, body composition of cull cows, quality factors and carcass deficiencies and edible and non-edible products derived from cull cow carcasses. Using this information a producer can better predict the value of cull cows and find the best marketing option to realize this value.

TERMINOLOGY

Canadian Carcass Grading System for Cows

Canada's grading system categorizes cull cow carcasses into grades D1, 2, 3 and 4 based on the following:

- D1 – excellent muscling, with less than 15 mm of firm, white or amber coloured backfat
- D2 – medium to excellent muscling, with less than 15 mm of white to yellow backfat
- D3 – deficient muscling with less than 15 mm of backfat
- D4 – deficient to excellent muscling with greater than 15 mm of backfat

Unlike the grading system for fed cattle, the cull cow grading system does not grade cows for marbling nor is it well used for establishing payment for cull cow carcasses. While live auction markets may describe D1, D2 cow prices, it is terminology adopted to describe live cows predicted to have the highest carcass value, even though the cow carcasses have not been graded.

Body Condition Scoring (BCS)

In Canada body condition scoring is a visual rating of fatness on a scale of 1 to 5, with 1 being the extremely lean cow and 5 being the extremely fat one. In the U.S. the scoring is on a scale of 1 to 9. BCS does not describe muscling and is terminology often used to describe cow condition for managing feeding systems. It is safe to predict that a BCS 1 cow would, using the cull cow carcass grading system grade D3 and a BCS 5 cow would grade D4.

CULL COW BODY COMPOSITION

Cull cow body composition varies considerably in terms of carcass weight and percentages of fat, muscle and bone. The percentages in Figure 1 are ranges where the majority of animals will fall, but there are always individual cases that will be outside these ranges.

Use the information in Figure 1 to predict the weight of saleable lean meat. Start with the live weight, make estimates of body fill, fat thickness and muscling, and then apply these predictions to the percentage ranges listed in Figure 1. Results should be within a couple percentage points of actual muscle and fat content.

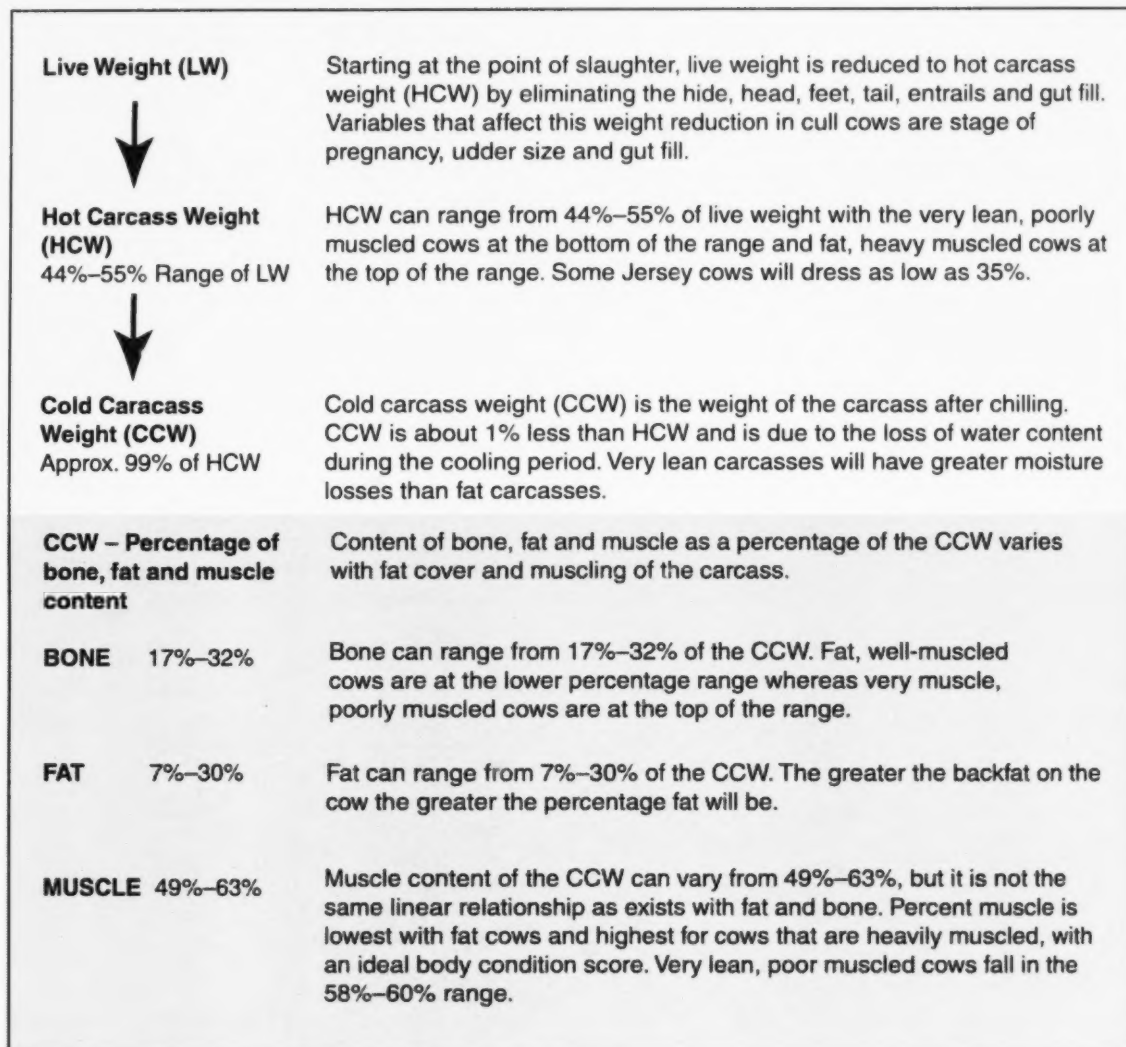


FIGURE 1. Predicting carcass components of cull cow.

CARCASS CONTENT OF CULL COWS

Products and estimated weights are shown in Figure 2.

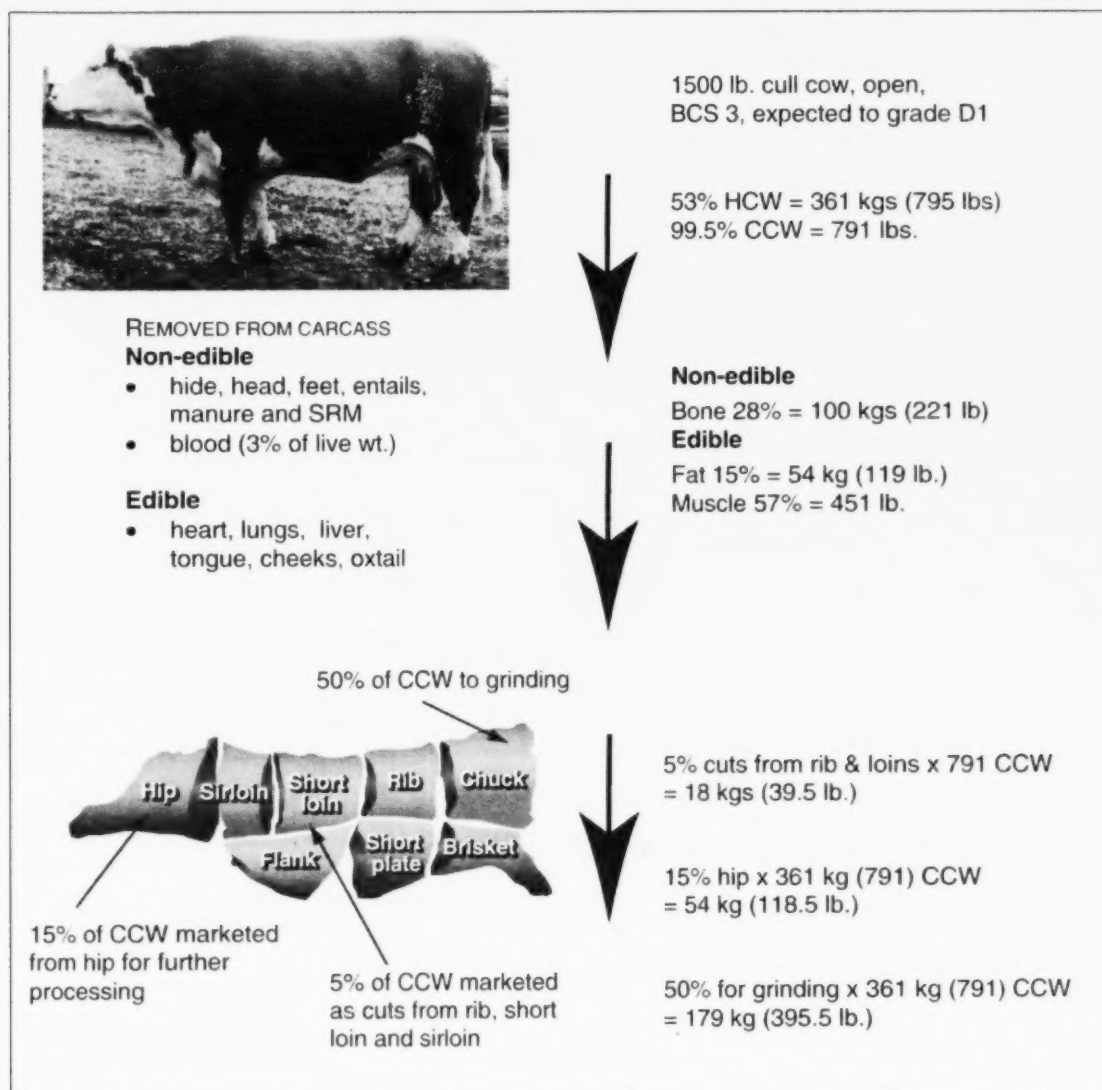


FIGURE 2. Products and estimated weights of products derived from an example cull cow.

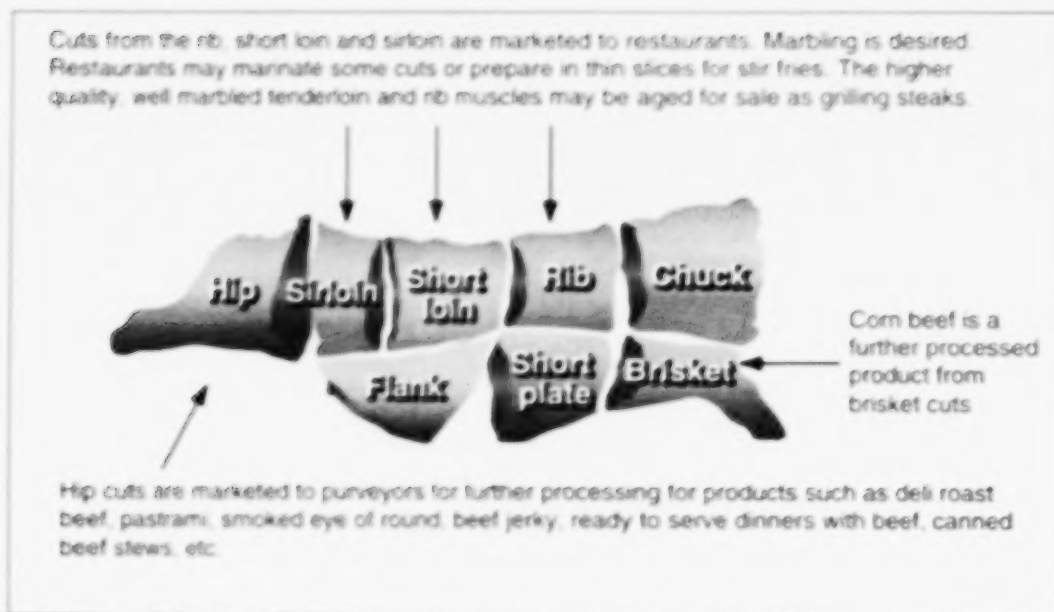


FIGURE 3. Retail meat cuts derived from wholesale cuts of a cull cow carcass.

EDIBLE AND NON-EDIBLE PRODUCTS FROM CULL COWS

At slaughter the hide, head, feet, blood, entrails and their contents are removed from the cull cow carcass. A weight difference exists between beef and dairy cows for the udder, which is removed with the hide. Understandably, dairy cows have a much higher udder weight. Edible products from the removed components are the heart, liver, lungs, tongue, cheek and oxtail. Any animal deemed to be 30 months of age or greater must have Specified Risk Materials (SRM) removed from the carcass. SRM include the skull, brain, eyes, tonsils, spinal cord, and clusters of nerve cells connected to the spinal cord and part of the small intestines. SRM cannot be used in any by-products such as pet foods and must be disposed of.

Prior to and following slaughter qualified persons carry out health inspections. Carcasses that pass health inspection are chilled rapidly to ensure control of any pathogen loads. Hot carcass weights are recorded before cooling and after an overnight chilling cold carcass weights are recorded and carcasses graded if required. Carcasses are then fabricated by completely deboning.

Edible Products with Location Derived from Carcass:

The majority of the carcass is sold as trimmings for grinding. Fat is included with trim as fat carcasses will be balanced out with lean carcasses. Most of this will be

used in products such as ground beef burgers, meat balls, meat loaf, taco filling, etc. (See Figure 3.)

CARCASS DEFICIENCIES

Carcass deficiencies can reduce the value of cull cow carcasses. Canadian National Beef Quality audits show injection site lesions, bruising and condemnations as contributing factors in reducing the value of carcasses.

- **Injection site lesions** continue to be at the top of the list resulting in economic losses to the industry. While the promotion of neck injections over the past 10 years has decreased the incidence of injection site lesions in finished cattle, this is not the case for cull cows. Lesion areas must be cut out of carcasses and discarded. This is not as important in cull cows as with finished cattle where higher valued cuts cannot be sold with holes in them. Deep muscle lesions are a big concern as they often reach the consumer undetected. Most consumers lose their appetite for beef when encountering these lesions.
- **Bruising** continues to result in losses to the beef industry. Bruised areas must be trimmed from carcasses. The larger the bruise the greater the weight trimmed. Bruising is more frequent in cull cows than finished cattle. One reason is that finished cattle tend to go directly from farm to packing plant and are therefore handled less than cull cows — that move

from farm to sale barn then to slaughter. Cull cows also have less fat to cushion bumps in handling systems. To reduce bruising it is essential to have well planned handling systems for moving and loading cattle. Cattle should also be transported according to accepted good handling practices. (See www.carc-crac.ca/english/codes_of_practice/factsheets/BEEF.htm)

- **Condemnations** of whole carcasses, heads and livers will be reduced in the future when regulation changes prevent downer animals from being delivered to slaughter facilities. In the past downer cows had a much higher frequency of condemnations. Cows with advanced cancer eye, lump jaw or other visible signs of abnormalities are presently not being accepted at some slaughter plants and bring virtually nothing if marketed through the live auction ring. The producer is advised to euthanize these animals on-farm. Carcasses with visible problems are condemned immediately. Suspect carcasses are tested and must be held from any further processing until test results are returned to determine condemnation status. Heads, livers or lungs could be condemned without the complete carcass being condemned.

Reasons for Condemnations

Carcasses

- emaciation
- lymph gland cancer
- peritonitis
- pneumonia
- cancer eye
- edema
- arthritis
- blood poisoning
- bruising
- other cancers
- lameness

SUMMARY

To achieve maximum returns when marketing cull cows, it is vital that producers have knowledge of cull cow body and carcass composition, and the edible and non-edible products that can be marketed from the carcass. Knowing weights, body condition and muscling, a producer can predict the value of saleable products from the cull cow carcass.

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This factsheet was authored by **Don Blakely**, Beef Quality Assurance Program Lead, OMAFRA, Fergus.

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Agricultural Information Contact Centre

1-877-424-1300

ag.info@omafra.gov.on.ca

www.omafr.gov.on.ca

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